

# Interpreting the dynamic performance effect of intellectual capital through a value-added-based perspective

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## ABSTRACT

### Purpose

The question of whether intellectual capital (IC) is beneficial to firm performance is debatable because of the diverse effects of IC and its components on firm performance. Building on the concept of pay–performance relation, this study aims to provide new insights into how changes in IC affect changes in firm performance.

### Design/methodology/approach

Data envelopment analysis is employed to measure firm performance, and value-added intellectual coefficient (VAIC™) is selected to evaluate the IC and its components, namely human capital efficiency (HCE), structural capital efficiency (SCE), and capital employed efficiency (CEE). Ordinary least squares regression is applied to study the relationship between changes in IC and changes in firm performance using 6,408 firm-year observations of electronics companies listed in Taiwan from 2006 to 2017.

### Findings

Empirical results suggest that IC efficiency and CEE significantly and negatively affect firm performance, thereby suggesting a contradictory common sense with the resource-based view on the beneficial effects of IC. However, changes in IC efficiency and HCE are significantly and positively related to changes in firm performance, including changes in firm efficiency and sales growth.

### Practical implications

This study suggests that managers should continuously pay attention to adjusting their IC, especially human capital (HC) for better decisions that help grow firm performance. Moreover, investors can grasp how sensitive firm performance is to IC.

Originality/value

This study argues the relationship between IC and firm performance in the same vein as a pay-for-performance link, suggesting that future studies should account for increases or decreases in IC.

**KEYWORDS:** Intellectual capital, Firm performance, VAIC, Data envelopment analysis, Pay-performance relation

#### **ACKNOWLEDGEMENT**

We would like to thank Universiti Malaysia Pahang, which financially supported this research (University Grant Scheme RDU1903110).